

CLAIMS

1. A process for producing a ceramic slurry composition for 3D printing comprising the steps of:
 - 5 a. mixing precursor inorganic components of porcelain using ball mill, then drying to obtain a homogeneous mix of porcelain;
 - b. modifying the surface of the porcelain using a polymeric additive via a ball mill with a solvent selected from
10 methanol or isopropyl alcohol, then drying to obtain modified porcelain powder;
 - c. combining the modified porcelain powder with an organic resin at a porcelain-to-resin ratio of 1:2 to 2:1 using ball mill for 24 to 48 hours to obtain a slurry; and
 - 15 d. ageing the slurry for 5 to 8 hours to remove trapped air and obtain the ceramic slurry composition.
2. The process of claim 1, wherein the precursor inorganic components in step a) comprises 15-20% w/w feldspar, 50-
20 60% w/w silica, 5-10% w/w clay, and 15-20% w/w alumina.
3. The process of claim 1, wherein the polymeric additive is selected from the group consisting of polyethylene glycol, oleic acid, stearic acid, and combinations thereof.
25
4. The process of claim 1, wherein the organic resin is a liquid organic resin selected from the group consisting of polylactic acid, polymethylmethacrylate, and acrylate-based resins.
30